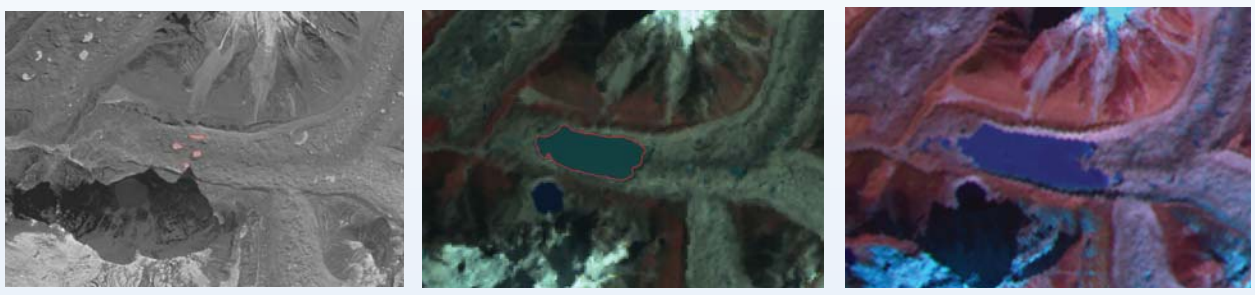
Remote Sensing Activities at MENRIS/ICIMOD

The International Centre for Integrated Mountain Development (ICIMOD) is an independent regional knowledge, learning and enabling centre serving the eight regional member countries of the Hindu Kush-Himalayas (HKH) – Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan – and the global mountain community.

Inventory of glaciers, glacial lakes and potential impact of GLOFs

Global warming has resulted in retreat of glaciers, increase in the number and size of glacial lakes and increased threat of Glacial Lake Outburst Floods (GLOFs). ICIMOD in collaboration with different partner organisations has prepared a digital database of glaciers and glacial lakes in the HKH region using RS and GIS.



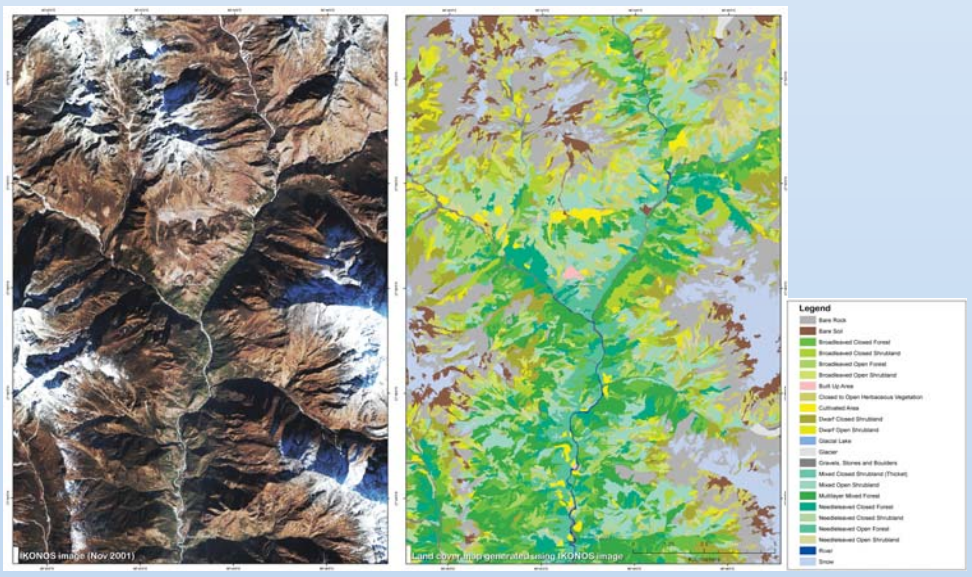
1962 Corona Image of Imja area | 1992 Landsat Image of Imja area | 2005 IRS LISS3 Image of Imja area

The Imja glacier in the Dudh Koshi valley south of Mount Everest in the Nepal Himalaya is retreating at a rate as high as 70m per year accompanied by rapid growth of Imja Lake.

Imja Tsho glacial lake viewing towards south-east from lower part of right lateral moraine (Photo: Govinda Joshi 2007)

Raphstreng Tsho lake in contact with actively retreating glacier and mitigation by manual excavation on end moraine (Photo: Karma 2004)

Land Cover Assessment



Land cover assessment and monitoring of its dynamics are important for the sustainable management of natural resources, environmental protection and food security as well as core data for monitoring and modeling climate change.

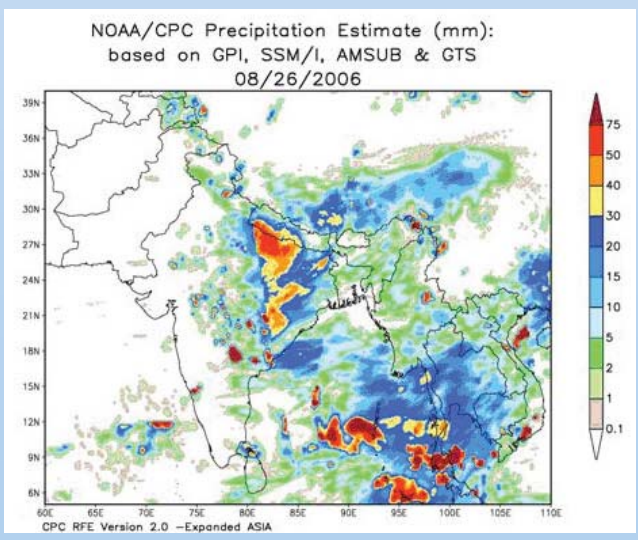
Land cover initiatives at ICIMOD

- Land cover assessment of Sagarmatha National Park - Nepal, Central Karakoram National Park - Pakistan, and Qumo langma Nature Preserve – Tibet, China under HKKH Partnership Project.
- Land cover change in Eastern Himalaya
- Regional land cover assessment of HKH region under FAO-GLCN Regional Harmonization Programme (RHAP).

Satellite Rainfall Estimation

Precipitation is an essential component of the hydrological cycle, and accurate regional rainfall estimate is necessary to improve short term, medium and long term weather forecasts and climate predictions.

The Satellite Rainfall Estimates describe the quantitative and spatial distribution of precipitations and an extremely powerful tool for obtaining rainfall pattern of large rugged terrains that can be used by hydrologic models to produce forecasts of river discharge.



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